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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No. 09/550,644

Filed: April 14, 2000

For: **Method and System for Down-
Converting an Electromagnetic
Signal, Transforms for Same,
and Aperture Relationships**

Art Unit: 2681

Examiner: Gelin, J.

Atty. Docket: 1744.0010009

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Technology Center 2600

Fourth Supplemental Information Disclosure Statement

Commissioner for Patents
Washington, D.C. 20231

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The reference numbering on the accompanying Form PTO-1449 for this Fourth Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Third Supplemental Information Disclosure Statement, filed December 9, 2002.

Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Documents AF50-AH50, AA51, AC51 and AF51 were cited in an Office Action in co-pending U.S. Patent Appl. No. 09/476,330, filed January 3, 2000, entitled, "Multi-Mode, Multi-Band Communication System," directed to related subject matter.

Document AI50 was cited in an Office Action in co-pending U.S. Patent Appl. No. 09/567,963, filed May 10, 2000, entitled, "Frequency Synthesizer Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AB51, AD51 and AE51 were cited in an Office Action in co-pending U.S. Patent Appl. No. 09/526,041, filed March 14, 2000, entitled, "DC Offset, Re-radiation, and I/Q Solutions Using Universal Frequency Translation Technology," directed to related subject matter.

Document AH51 was cited in an Office Action in co-pending U.S. Patent Application Serial No. 09/476,092, filed January 3, 2000, entitled "Analog Zero IF FM Decoder and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,600,680 and 5,606,731, which have already been cited in the present application in the Second Supplemental Information Disclosure Statement of August 9, 2002.

Documents AI51, AA52 and AI52 are co-owned patents which are directed to related subject matter.

Documents AB52 and AN58-AP58 were cited in an Office Action in co-pending U.S. Patent Appl. No. 09/567,977, filed May 10, 2000, entitled, "Optical Down-converter Using Universal Frequency Translation Technology," directed to related subject matter.

Documents AC52-AE52 were cited in an International Search Report in PCT Appl. No. PCT/US02/35861, filed November 8, 2002, entitled, "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AF52, AG52, AK22-AM22 and AQ58 were cited in an International Search Report in PCT Appl. No. PCT/US01/15555, filed May 16, 2001, entitled, "Apparatus, System, and Method for Down-Converting and Up-Converting Electromagnetic Signals," directed to related subject matter. Also cited in said Search Report were U.S. Patent Nos. 4,888,557, 5,454,007, 5,640,698 and 5,705,949, and PCT Publication No. WO 96/02977, which have already been cited in the present application in the Information Disclosure Statement of September 14, 2001.

Documents AH52 and AJ23 were cited in an Invitation to Pay Additional Fees in PCT Appl. No. PCT/US01/43077, filed November 14, 2001, entitled "Method and Apparatus for a Parallel Correlator and Applications Thereof," directed to related subject matter.

Documents AA53-AD53 were cited in an Office Action in co-pending U.S. Patent Application No. 09/986,764, filed November 9, 2001, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

The other documents in the PTO-1449 do not fall within the above categories.

It is noted that some of these documents could be classified in more than one of the above categories.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- ☒ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.
- ☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
 - ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
 - ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
 - ☐ c. Attached is our PTO-2038 Credit Card Payment Form [**OR**] Check No. _____ in the amount of \$ _____ in payment of the fee under 37 C.F.R. § 1.17(p).

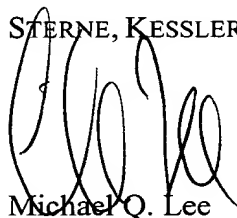
- ☐ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our Check No. _____ in the amount of \$ _____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☐ 6. A concise explanation of the relevance of the non-English language document(s) appears below:
- ☐ 7. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



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July 23, 2003

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Mail Stop: Art Unit 2681
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JUL 24 2003

Technology Center 2600

Re: U.S. Non-Provisional Utility Patent Application
Appl. No. 09/550,644; Filed: April 14, 2000
For: **Method and System for Down-Converting an Electromagnetic
Signal, Transforms for Same, and Aperture Relationships**
Inventors: Sorrells *et al.*
Our Ref: 1744.0010009

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Fourth Supplemental Information Disclosure Statement;
2. A listing of the cited documents on Form PTO-1449 (4 pages);
3. Copies of thirty-five (35) cited documents; and
4. One (1) return postcard.

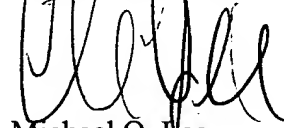
It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
July 23, 2003
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

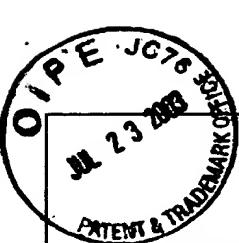
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

A handwritten signature in black ink, appearing to read "Michael Q. Lee", is written over the printed name.

Michael Q. Lee
Attorney for Applicants
Registration No. 35,239

Enclosures

::ODMA\HODMA\SKGF_DC1;158445;1



FORM PTO-1449

**FOURTH SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENT**ATTY. DOCKET NO.
1744.0010009APPLICATION NO.
09/550,644APPLICANT
Sorrells et al.FILING DATE
April 14, 2000GROUP
2681**U.S. PATENT DOCUMENTS**

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB- CLASS | FILING DATE |
|---------------------|------|--------------------|---------|-----------------|-------|---------------|-------------|
| | AA51 | 5,016,242 | 05/1991 | Tang | | | |
| | AB51 | 5,937,013 | 08/1999 | Lam et al. | | | |
| | AC51 | 6,014,551 | 01/2000 | Pesola et al. | | | |
| | AD51 | 6,073,001 | 06/2000 | Sokoler | | | 05/08/1998 |
| | AE51 | 6,085,073 | 07/2000 | Palermo et al. | | | 03/02/1998 |
| | AF51 | 6,400,963 B1 | 06/2002 | Glöckler et al. | | | 05/21/1999 |
| | AG51 | 6,230,000 B1 | 05/2001 | Tayloe | | | 10/15/1998 |
| | AH51 | 5,483,695 | 01/1996 | Pardoen | | | |
| | AI51 | 6,542,722 B1 | 04/2003 | Sorrells et al. | | | 04/16/1999 |

FOREIGN PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUB- CLASS | TRANSLATION |
|---------------------|------|-----------------|---------|---------|-------|---------------|-------------|
| | AJ23 | WO 00/31659 A1 | 06/2000 | PCT | | | N/A |
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

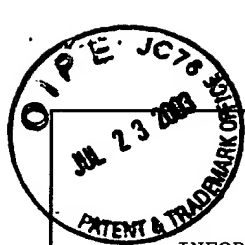
| | | | |
|--|----|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | AN | <u>58</u> | Dines, J.A.B., "Smart Pixel Optoelectronic Receiver Based on a Charge Sensitive Amplifier Design," <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , IEEE, Vol. 2, No. 1, pp. 117-120 (April 1996). |
| | AO | <u>58</u> | Simoni, A. et al., "A Digital Camera for Machine Vision," <i>20th International Conference on Industrial Electronics, Control and Instrumentation</i> , IEEE, pp. 879-883 (September 1994). |
| | AP | <u>58</u> | Stewart, R.W. and Pfann, E., "Oversampling and sigma-delta strategies for data conversion," <i>Electronics & Communication Engineering Journal</i> , IEEE, pp. 37-47 (February 1998). |
| | AQ | <u>58</u> | Rudell, J.C. et al., "A 1.9-Ghz Wide-Band IF Double Conversion CMOS Receiver for Cordless Telephone Applications," <i>IEEE Journal of Solid-State Circuits</i> , IEEE, Vol. 32, No. 12, pp. 2071-2088 (December 1997). |
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EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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FORM PTO-1449

FOURTH SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0010009APPLICATION NO.
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U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB- CLASS | FILING DATE |
|---------------------|------|--------------------|---------|-----------------|-------|---------------|-------------|
| | AA52 | 6,560,301 B1 | 05/2003 | Cook et al. | | | 04/16/1999 |
| | AB52 | 6,098,046 | 08/2000 | Cooper et al. | | | 06/29/1998 |
| | AC52 | 5,410,326 | 04/1995 | Goldstein | | | |
| | AD52 | 5,956,025 | 09/1999 | Goulden et al. | | | |
| | AE52 | 6,127,941 | 10/2000 | Van Ryzin | | | 02/03/1998 |
| | AF52 | 5,564,097 | 10/1996 | Swanke | | | |
| | AG52 | 5,898,912 | 04/1999 | Heck et al. | | | |
| | AH52 | 4,660,164 | 04/1987 | Leibowitz | | | |
| | AI52 | 6,580,902 B1 | 06/2003 | Sorrells et al. | | | 04/16/1999 |

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FOREIGN PATENT DOCUMENTS

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APPLICATION NO.
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|---------------------|------|--------------------|---------|-----------------------|-------|---------------|-------------|
| | AA53 | 4,857,928 | 08/1989 | Gailus <i>et al.</i> | | | |
| | AB53 | 5,389,839 | 02/1995 | Heck | | | |
| | AC53 | 5,471,665 | 11/1995 | Pace <i>et al.</i> | | | |
| | AD53 | 6,327,313 B1 | 12/2001 | Traylor <i>et al.</i> | | | 12/29/1999 |
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